

Remarks/Arguments

Claims 1 and 15 have been amended.

Specification

The specification has been amended. Support for such an amendment is found in Figures 2A, 2B, 2C, 3, and 4.

Rejection under 35 U.S.C. § 112

Claim 15 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In particular, claim 15 depended upon claim 2, which was previously cancelled. Accordingly, claim 15 has been amended to depend on claim 1. Applicant therefore respectfully requests reconsideration of this rejection.

Rejections under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 1, 3, 4, 7, 10, 13, 14, 31, 32, and 34 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,015,594 to Chu et al. ("*Chu*"). Applicant respectfully requests reconsideration of this rejection for at least the following reasons.

With respect to amended claim 1, claim 1 currently recites, among other things, the features "a low resistive path barrier formed surrounding the conductivity region to isolate the conductivity region and the semiconductor device from a substrate that supports the conductivity region and the low resistive path barrier," and "wherein the low resistive path barrier surrounds the conductivity region to further isolate the conductivity region and the semiconductor device from the deep trench isolation." Applicant submits that such features are not taught in *Chu*. Instead, *Chu* only discloses a collector layer 12, which the Examiner alleges as being the low resistive path barrier, that is actually part of the semiconductor device (i.e., BiCMOS) itself. As clearly depicted throughout *Chu* (see, for example, figures 15-19 of *Chu*), the collector layer 12 **does not** "surround" the semiconductor device to isolate the semiconductor device from the deep trench isolation 20 as currently recited in claim 1. For at least this reason, claim 1 is patentable over *Chu*.

Claims 3, 4, 7, 10, 13, 14, 31, 32, and 34 directly or indirectly depend from claim 1, incorporating its features. Thus, for at least the same reasons that claim 1 is patentable over *Chu*, claims 3, 4, 7, 10, 13, 14, 31, 32, and 34 are also patentable over *Chu*.

Rejection under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 1, 3, 4, 6-11, 13, 31, and 34 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,614,750 to Ellul et al. ("*Ellul*") in view of U.S. Patent No. 4,975,764 to Sheng T. Hsu ("*Hsu*"). Applicant respectfully requests reconsideration of this rejection for at least the following reasons.

As previously described, claim 1 has been amended to include the features "wherein the low resistive path barrier surrounds the conductivity region to further isolate the conductivity region and the semiconductor device from the deep trench isolation." Such features are not taught or suggested by *Ellul* and/or *Hsu*. That is, the Examiner in the Office Action alleges that the collector electrode 55 of *Ellul* is a low resistive path barrier as recited in claim 1. However, the collector electrode 55, **which is actually part of the semiconductor device** (i.e., bipolar transistor) of *Ellul*, **does not** surround the conductive region to further isolate the conductivity region and the semiconductor device from the deep trench isolation" as recited in claim 1.

As for *Hsu*, *Hsu* discloses a BiCMOS having a buried collector layer 104 and 150 (i.e., low resistive path barrier), which is a conventional design for BiCMOS. However, the buried collector layer 104 and 150 of *Hsu* **is part of the semiconductor device** (i.e., BiCMOS) itself and **does not** surround "the conductivity region to further isolate the conductivity region and the semiconductor device from the deep trench isolation" as recited in claim 1. For at least these reasons, claim 1 is patentable over *Ellul* in view of *Hsu*.

Claims 3, 4, 6-11, 13, 31, and 34 each directly or indirectly depend from claim 1, incorporating its features. Thus, for at least the same reasons that claim 1 is patentable over *Ellul* in view of *Hsu*, claims 3, 4, 6-11, 13, 31, and 34 are likewise patentable over *Ellul* in view of *Hsu*.

Claims 6 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Chu* in view of U.S. Patent No. 4,825,275 to Stephen R. Tomassetti ("*Tomassetti*"). Applicant respectfully requests reconsideration of this rejection for at least the following reasons.

Claims 6 and 9, directly or indirectly depend from claim 1, incorporating its features. *Chu* appears to have been cited for the proposition that it disclosed all of the features of claims 6 and 9 and their base claim, claim 1 except for the feature of the low resistive path barrier being coupled to a power supply, which the Examiner alleges as being taught by *Tomassetti*. However, and as previously discussed, *Chu* is deficient with respect to claim 1. Furthermore, the deficiencies of *Chu* as they relate to claim 1 (the features of which are incorporated in claims 6 and 9) are not cured by the teaching of *Tomassetti*. Thus, for at least these reasons, claims 6 and 9 are patentable over *Chu* in view of *Tomassetti*.

Claim 12 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Chu* or *Ellul* and *Hsu* as applied to claim 1, and in further view of U.S. Patent No. 5,939,755 to Takeuchi et al. ("*Takeuchi*"). Applicant respectfully requests reconsideration of this rejection for at least the following reason.

Claim 12 depends from claim 1, incorporating its features. The deficiencies of *Chu* or *Ellul* and *Hsu* as they relate to claim 1 as described above are not cured by the teachings of *Takeuchi*. For at least this reason, claim 12 is patentable over *Chu* or *Ellul* and *Hsu*, and in further view of *Takeuchi*.

Claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Ellul* and *Hsu* as applied to claim 8, and in further view of U.S. Patent No. 5,635,742 to Hoshi et al. ("*Hoshi*"). Applicant respectfully requests reconsideration of this rejection for at least the following reasons.

Claim 14 depends indirectly from claim 1 via claim 8, incorporating its features. The deficiencies of *Ellul* and *Hsu* as they relate to claim 1 as described above are not cured by the teachings of *Hoshi*. For at least this reason, claim 14 is patentable over *Ellul* and *Hsu* in view of *Hoshi*.

Claim 15 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Chu* or *Ellul* and *Hsu* as applied to claim 1, and in further view of U.S. Patent Application No. 2003/0211701 to Desko et al. ("*Desko*"). Applicant respectfully requests reconsideration of this rejection for at least the following reason.

Claim 15 depends from claim 1, incorporating its features. The deficiencies of *Chu* or *Ellul* and *Hsu* as they relate to claim 1 as described above are not cured by the teachings of *Desko*. For at least this reason, claim 15 is patentable over *Chu* or *Ellul* and *Hsu*, and in further view of *Desko*.

Claim 33 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Chu* or *Ellul* and *Hsu* as applied to claim 1, and in further view of U.S. Patent No. 5,278,084 to Lee et al. ("*Lee*"). Applicant respectfully requests reconsideration of this rejection for at least the following reason.

Claim 33 depends from claim 1, incorporating its features. The deficiencies of *Chu* or *Ellul* and *Hsu* as they relate to claim 1 as described above are not cured by the teachings of *Lee*. For at least this reason, claim 33 is patentable over *Chu* or *Ellul* and *Hsu*, and in further view of *Lee*.

Conclusion

In view of the foregoing, the Applicant respectfully submits that claims 1, 3, 4, 6-15, and 31-34 are in a condition for allowance. Early issuance of Notice of Allowance is respectfully requested.

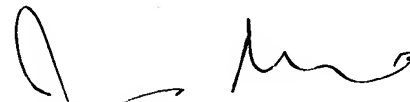
If the Examiner has any questions, he is invited to contact the undersigned at (503) 796-2099.

The Commissioner is hereby authorized to charge shortages or credit overpayments to Deposit Account No. 500393.

Respectfully submitted,
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Dated: _____

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